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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/813,257	03/19/2001	Lowell E. Kolb	10001844-1	2624

7590 12/06/2001  
HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, CO 80527-2400

EXAMINER

VU, QUYNH NHU H

ART UNIT	PAPER NUMBER
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2841

DATE MAILED: 12/06/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/813,257

Applicant(s)

KOLB ET AL.

Examiner

Quynh-Nhu H. Vu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 11 is indefinite because it can not be determined what is meant by the recitation "said filler material is one of a plurality of different filler materials". Applicant should amend this claim for more clearly.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 4-5, 7, 12, 14 and 18-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Higgins, III [US 5,629,989].

As to claims 1 and 12, Higgins, III discloses in Figs. 2-3 a printed circuit board comprising: a printed wiring board (16); a component (13, 52) mounted on the printed wiring board; and a high viscosity electrically non-conductive filler material (24, 60, 62, 64) covering a region of the printed wiring board having at least one cavity (20); wherein the filler material

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substantially covering the cavity such as the cavity is substantially inaccessible and that the covering region has a contiguous, contoured surface.

As to claim 2, the filler material is at least partially in-fills the cavity.

As to claim 4, the cavities are between neighboring components mounted on the printed wiring board (fig. 2).

As to claim 5, the cavities are between a component and the printed wiring board.

As to claims 7 and 14, the filler material is an epoxy (col. 6, lines 29-32).

As to claims 18-19, since the method of manufacturing the device is merely a list of steps of forming, these steps must be performed in order to obtain the device. Therefore, the method of manufacturing would be inherent to the shown structure of the device.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Higgins in view of Glovatsky et al. [US 5,929,375].

Higgins disclose one of the plurality of cavities located beneath leads of a components but not located in between the leads of the components.

Glovatsky et al. disclose in Fig. 2 plurality of cavities (28) located beneath and between leads of a components.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to employ the cavities located between and beneath the leads of the components, as

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taught by Gloyatsky et al, in order to increase the attachable between printed circuit board and electrical device.

7. Claims 6, 8-10 and 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higgins, III.

Higgins, III does not disclose the filler material is thixotropic, epoxy; wherein the epoxy is one of the family of Bisphenol-A epoxies mixed with an amine harder; wherein the epoxy is a thermal cured epoxy, latex based non-electrically conductive epoxy. However, it is well known in the art to use thixotropic, epoxy as filler material. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use filler material as thixotropic, epoxy; wherein the epoxy is one of the family of Bisphenol-A epoxies mixed with an amine harder; wherein the epoxy is a thermal cured epoxy, latex based non-electrically conductive epoxy, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended uses as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quynh-Nhu H. Vu whose telephone number is 703-305-0850. The examiner can normally be reached on 7:30-5:00 (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on 703-308-3301. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7724 for regular communications and 703-308-7722 for After Final communications.

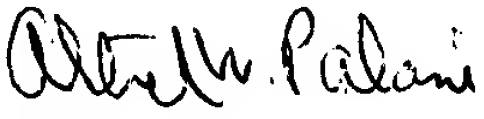
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

QNV  
November 27, 2001

  
**ALBERT W. PALADINI**  
**PRIMARY EXAMINER**